

## **Talking Points for Juneau County Groundwater Investigation**

### **Background**

- EPA is releasing this memo which provides analysis of data collected as part of the Juneau County groundwater investigation.
- After receiving complaints from residents regarding potential private drinking water well contamination in the Town of Armenia, EPA sampled groundwater in the area from April 30 through May 3, 2018.
- EPA collected groundwater samples at 41 temporary boring locations. The samples were analyzed for multiple parameters, including nutrients. Samples were collected at two depths to better characterize the extent of potential nitrate contamination in the aquifer.
- EPA used temporary or “point-in-time” groundwater sampling techniques with the goal of characterizing nature and extent of pollutants in groundwater. This information can be used to identify potential sources of groundwater pollutants and potential impacts to drinking water sources.
- The borings were located in a grid network designed to characterize groundwater conditions upgradient and downgradient of potential sources of well contamination.

### **Findings**

- EPA data shows elevated levels of nitrates in groundwater down gradient of crop fields. None of the 93 groundwater samples collected upgradient of crop fields exceeded the 10 mg/l nitrate standard. 130 of the 200 (65%) groundwater samples collected downgradient of crop fields exceeded the 10 mg/l nitrate standard. Chloride, bromide, sulfate, and TDS data show similar patterns of lower concentrations upgradient.
- Over 50% of the isotope sample results indicate that commercial nitrogen fertilizer is the likely source of the groundwater contamination.
- Isotope data and spatial analysis of sample locations suggest any potential impact of septic systems would be very minor and would not account for the widespread contamination.
- The combination of crop types, common use of nitrogen-based fertilizers, and soil conditions in the study area results in a greater potential for nitrate leaching to groundwater.
- The study findings helped to bring together WDNR, Juneau and Wood county government agencies, and a local organization representing local agricultural producers, to seek a solution to the nitrate contamination problem. This effort resulted in an Memorandum of Understanding in which the parties committed to additional well monitoring and providing water filters to homeowners with nitrate-contaminated wells.